

### AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the present application. Please amend the claims as follows:

1-12. (Canceled).

13. (Currently amended) ~~The~~ A production method of polymer of conjugated dienes ~~according to claim 12, comprising:~~

reacting conjugated dienes with a catalyst composition for polymerization of a conjugated diene, comprising: (A) a metallocene complex represented by a general formula (I):  $(C_5R^1R^2R^3R^4R^5)_aMX_b \cdot L_c$  wherein M represents a rare earth metal;  $C_5R^1R^2R^3R^4R^5$  represents a substituted cyclopentadienyl group selected from a 1-ethyl-2,3,4,5-tetramethylcyclopentadienyl group, a 1-isopropyl-2,3,4,5-tetramethylcyclopentadienyl group, a 1-n-butyl-2,3,4,5-tetramethylcyclopentadienyl group, a 1-trimethylsilyl-2,3,4,5-tetramethylcyclopentadienyl group, a 1-benzyl-2,3,4,5-tetramethylcyclopentadienyl group, a 1-phenyl-2,3,4,5-tetramethylcyclopentadienyl group, a 1-trifluoromethyl-2,3,4,5-tetramethylcyclopentadienyl group, a 1-isobutyl-2,3,4,5-tetramethylcyclopentadienyl group, a 1-triethylsilyl-2,3,4,5-tetramethylcyclopentadienyl group, and a 1-triisopropylsilyl-2,3,4,5-tetramethylcyclopentadienyl group; X represents a hydrogen atom, a halogen atom, an alkoxide group, a thiolate group, an amide group, or a hydrocarbon group having 1 to 20 carbon atoms; L represents a Lewis basic compound; "a" represents an integer of 1 or 2; "b" represents an integer of 0, 1, or 2; and "c" represents an integer of 0, 1, or 2; and (B) an ionic compound composed of a non-coordinating anion and a cation, and/or an aluminoxane, wherein the a polymerization reaction is performed in the presence of cyclohexane.

14. (Currently amended) A production method of polymer of conjugated dienes, wherein a cis-1,4-configuration content in microstructure of the polymer is 97.0 mol% or more; and a molecular weight distribution Mw/Mn is 2.00 or less, comprising:

reacting conjugated dienes with a catalyst composition for polymerization of a conjugated diene, comprising: (A) a metallocene complex represented by a general formula (I):  $(C_5R^1R^2R^3R^4R^5)_aMX_bL_c$  wherein M represents a rare earth metal;  $C_5R^1R^2R^3R^4R^5$  represents a substituted cyclopentadienyl group selected from a 1-ethyl-2, 3, 4, 5-tetramethylcyclopentadienyl group, a 1-isopropyl-2,3,4,5-tetramethylcyclopentadienyl group, a 1-n-butyl-2,3,4,5-tetramethylcyclopentadienyl group, a 1-trimethylsilyl-2,3,4,5-tetramethylcyclopentadienyl group, a 1-benzyl-2,3,4,5-tetramethylcyclopentadienyl group, a 1-phenyl-2,3,4,5-tetramethylcyclopentadienyl group, a 1-trifluoromethyl-2,3,4,5-tetramethylcyclopentadienyl group, a 1-isobutyl-2,3,4,5-tetramethylcyclopentadienyl group, a 1-triethylsilyl-2,3,4,5-tetramethylcyclopentadienyl group, and a 1-triisopropylsilyl-2,3,4,5-tetramethylcyclopentadienyl group; X represents a hydrogen atom, a halogen atom, an alkoxide group, a thiolate group, an amide group, or a hydrocarbon group having 1 to 20 carbon atoms; L represents a Lewis basic compound; "a" represents an integer of 1 or 2; "b" represents an integer of 0, 1, or 2; and "c" represents an integer of 0, 1, or 2; and (B) an ionic compound composed of a non-coordinating anion and a cation, and/or an aluminoxane, wherein the polymerization reaction is performed in the presence of cyclohexane.

15. (Currently amended) The production method according to ~~Claim 12~~ claim 13, wherein the substituted cyclopentadienyl group is selected from a 1-ethyl-2,3,4,5-tetramethylcyclopentadienyl group, a 1-isopropyl-2,3,4,5-tetramethylcyclopentadienyl group, a 1-n-butyl-2,3,4,5-tetramethylcyclopentadienyl group, and a 1-trimethylsilyl-2,3,4,5-tetramethylcyclopentadienyl group.

16. (Currently amended) The production method according to ~~Claim 12~~ claim 13, wherein the metallocene complex is a samarium complex.

17. (Currently amended) The production method according to ~~Claim 12~~ claim 13, wherein the ionic compound is one or two or more selected from triphenylcarbonium tetrakis(pentafluorophenyl)borate, triphenylcarbonium tetrakis(tetrafluorophenyl)borate, N,N-

dimethylanilinium tetrakis (pentafluorophenyl)borate, and 1,1'-dimethylferrocenium  
tetrakis(pentafluorophenyl)borate.

18. (Currently amended) The production method according to ~~Claim 12~~ claim 13,  
wherein the aluminosiloxane is methylaluminosiloxane and/or modified methylaluminosiloxane.

19. (Currently amended) The production method according to ~~Claim 12~~ claim 13,  
wherein the catalyst composition further comprises an organometallic compound of a group I to  
group III element in the periodic table.